

1 In the claims:

2 1. A method for enabling users of a network to create, store, and provide access to

3 relationships among document objects stored on the network, the method comprising the

4 steps of:

5 allowing a user of the network to create a link relationship between a first

6 document object and a second document object;

7 storing the link relationship in one or more link directories; and

8 providing all users of the network access to the link relationships stored in

9 the one or more link directories based upon the document object currently

10 accessed by the user.

11 2. The method of claim 1, wherein the providing step comprises providing access

12 only to authorized users.

13 3. The method of claim 1, further comprising authorizing users of the network to

14 perform the allowing, storing and providing steps.

15 4. The method of claim 1, wherein the allowing step comprises:

16 a first user locating a first document object;

17 the first user locating a second document object related to the first

18 document object in some manner determined by the first user; and

19 the first user creating a link relationship between the first document object

20 and the second document object.

21 5. The method of claim 4, wherein one or more of the steps of the method are

22 accomplished by automated procedures not requiring interaction with the user.

23 6. The method of claim 1, wherein the storing step comprises:

24 storing a link relationship entry in a link relationship table, wherein the

25 link relationship entry comprises fields including a first link reference to the first

26 document object and a second link reference to the second document object;

27 assigning link relationship attributes to the link relationship entry; and

28 setting a directional indicator for the link relationship entry.

29 7. The method of claim 6, wherein the step of storing the link relationship in one or

30 more link directories further comprises:

31 storing the first link reference to the first document object in a document

32 object table;

33 assigning document object attributes to the first link reference associated

34 with the first document object;

1 storing the second link reference to the second document object in a
2 document object table; and
3 assigning document object attributes to the second link reference
4 associated with the second document object.

5 8. The method of claim 7, wherein one or more of the link relationship attributes are
6 set; and a directional indicator for the link relationship attribute is set by associating one
7 document object attribute for the first link reference with one document object attribute
8 for the second link reference.

9 9. The method of claim 4 further comprising displaying to a second user a link
10 reference to a document object related to a document object the second user is currently
11 accessing, wherein the link reference displayed to the second user is determined by
12 identifying those link relationships stored in the one or more link directories that include a
13 link reference to a network address of the currently accessed document object.

14 10. The method of claim 9, wherein the displaying step comprises displaying more
15 than one link reference from one or more link directories.

16 11. The method of claim 9, wherein the displaying step comprises sorting and
17 presenting one or more link references by the one or more link directories storing the link
18 references.

19 12. The method of claim 11, wherein the displaying step comprises sorting and
20 presenting the one or more link references by attributes of the link relationships and link
21 references.

22 13. The method of claim 1, wherein the method is used on one or more of: a private
23 network, a closed network, a public network, and a private network that is connected to a
24 public network.

25 14. The method of claim 1, wherein the one or more link directories are accessible
26 only by a specific individual user of a client device.

27 15. The method of claim 1 wherein the one or more link directories may be stored on
28 a server connected to the network by means of a secure connection.

29 16. The method of claim 1 further comprising assigning attributes to the link
30 relationship established between the first document object and the second document
31 object.

32 17. The method of claim 16 further comprising assigning attributes to a first link
33 reference to the first document object and a second link reference to the second document
34 object.

1 18. The method of claim 16 wherein the link relationship stored in the one or more
2 link directories may be organized, sorted, searched and filtered by one or more attributes
3 assigned to the link relationships.

4 19. The method of claim 17 wherein the link references stored in the one or more link
5 directories may be organized, sorted, searched and filtered by one or more attributes
6 assigned to the link references.

7 20. The method of claim 1, wherein the step of providing one or more link references
8 to document objects on the network comprises:

9 selecting the displayed link references for display based on a link
10 relationship to the currently displayed document object; and

11 filtering the displayed link references by attributes.

12 21. A system for establishing and providing access to relationships between document
13 objects stored on a network wherein the relationship between a first document object and
14 a second document object may be created by an individual user of the network and
15 provided to other users of the network, the system comprising:

16 one or more client devices that access document objects stored on the
17 network and allow creation of link relationships between a first document object
18 and a second document object; and

19 one or more servers that store the link relationships created by the client
20 devices and transmit one or more link relationships and link references to the
21 client devices.

22 22. The system of claim 21, wherein the one or more servers filter and sort the link
23 relationships and link references before transmitting the link relationships and link
24 references to the client devices.

25 23. The system of claim 21, wherein the client devices filter and sort the link
26 relationships and link references after the link relationships and link references are
27 transmitted to the client devices from the one or more servers.

28 24. The system of claim 21, wherein the one or more servers comprise:

29 one or more link directories that store the link relationships created on the
30 one or more client devices;

31 a server manager module that coordinates communication between the one
32 or more link directories, a user directory, a database of user profile data, and the
33 one or more client devices if those client devices are requesting services from the
34 server; and

1 a user data store that stores information regarding authorized users of the
2 servers and link directories.

3 25. The system of claim 24, wherein the user data store comprises:

4 a user directory, the user directory comprising one or more user data
5 records containing personal identifying information and information regarding
6 which of the one or more link directories and the one or more servers a user may
7 be authorized to access;

8 a user profile store, the user profile store comprising one or more user
9 profile records each containing one or more user profiles for each authorized user
10 of the servers and link directories; and

11 a user account store, the user account store comprising one or more user
12 account records each containing Linkspace system usage data for each authorized
13 user of the servers and link directories.

14 26. The system of claim 21, wherein the one or more client devices comprise:

15 a client tool, wherein the client tool comprises a Linkspace graphic user
16 interface display;

17 a rendering tool that renders and displays document objects, the rendering
18 tool comprising:

19 a graphic user interface display; and

20 a document object network address; and

21 a network access tool that connects the rendering tool and the client tool to
22 the network.

23 27. The system of claim 26, wherein the document object network address comprises
24 a Uniform Resource Locator.

25 28. The system of claim 26, wherein the client device further comprises one of:

26 one or more link directories that store the link relationships;

27 a communications module that coordinates communication between the
28 one or more link directories, a user directory, a database of user profile data, and
29 the one or more client devices; and

30 a user data store that stores information regarding authorized users of the client
31 tool.

32 29. The system of claim 24, wherein the one or more link directories comprise:

33 a link relationship table comprising a plurality of link relationship entries,
34 the link relationship entries comprising:

1 a first field comprising a first link reference to the first document
2 object of the link relationship;
3 a second field comprising a second link reference to the second
4 document object of the link relationship;
5 one or more link relationship attributes providing information that
6 places the link relationship in a context useful to the user; and
7 a directional indicator that indicates whether the link relationship
8 between the first link reference to the first document object and the second
9 link reference to the second document object applies in either direction or
10 in both directions.

11 30. The system of claim 29, wherein the directional indicator comprises a plurality of
12 directional indicator fields, each directional indicator field corresponding to one of the
13 one or more link relationship attributes and indicating whether the corresponding link
14 relationship attribute applies in one direction or in both directions between the first link
15 reference to the first document object and the second link reference to the second
16 document object.

17 31. The system of claim 29, wherein the one or more link directories further comprise:
18 a document object table comprising a plurality of link reference entries, the
19 link reference entries comprising:
20 a network address of the document object on the network indicated
21 by the link reference entry; and
22 one or more document object attributes providing information that
23 places the document object indicated by the link reference entry in a
24 context that is useful to the user.

25 32. The system of claim 31, wherein the network address comprises a Uniform
26 Resource Locator.

27 33. The system of claim 32, wherein the link reference entries further comprise a
28 listing of all link relationship entries in which the network address of the document object
29 indicated by the link reference entry is present in the first field or the second field of the
30 link relationship entries.

31 34. The system of claim 33, wherein the network address comprises a Uniform
32 Resource Locator.

1 35. The system of claim 29, wherein the network address of the document object on
2 the network may include only that information necessary to specify the location of the
3 document object on the network.

4 36. The system of claim 35, wherein the network address comprises a Uniform
5 Resource Locator.

6 37. The system of claim 21, wherein the network is one or more of: a private
7 network, a closed network, a public network, and a private network that is connected to a
8 public network.

9 38. The system of claim 21, wherein the one or more link directories are accessible
10 only by a specific individual user of a client device.

11 39. The system of claim 21, wherein the one or more link directories may be stored on
12 a server connected to the network by means of a secure connection.

13 40. A computer readable medium upon which is embedded instructions for carrying
14 out a method for enabling users of a network to create, store, and provide access to
15 relationships among document objects stored on the network, the method comprising the
16 steps of:

17 allowing a user of the network to create a link relationship between a first
18 document object and a second document object;

19 storing the link relationship in one or more link directories; and
20 providing all users of the network access to the link relationships stored in
21 the one or more link directories based upon the document object currently
22 accessed by the user.

23 41. The computer readable medium of claim 40, wherein the providing step comprises
24 providing access only to authorized users.

25 42. The computer readable medium of claim 40, further comprising authorizing users
26 of the network to perform the allowing, storing and providing steps.

27 43. The computer readable medium of claim 40, wherein the allowing step comprises:
28 a first user locating a first document object;
29 the first user locating a second document object related to the first
30 document object in some manner determined by the first user; and
31 the first user creating a link relationship between the first document object
32 and the second document object.

1 44. The computer readable medium of claim 43, wherein one or more of the steps of
2 the method are accomplished by automated procedures not requiring interaction with the
3 user.

4 45. The computer readable medium of claim 40, wherein the storing step comprises:
5 storing a link relationship entry in a link relationship table, wherein the
6 link relationship entry comprises fields including a first link reference to the first
7 document object and a second link reference to the second document object;
8 assigning link relationship attributes to the link relationship entry; and
9 setting a directional indicator for the link relationship entry.

10 46. The computer readable medium of claim 45, wherein the step of storing the link
11 relationship in one or more link directories further comprises:

12 storing the first link reference to the first document object in a document
13 object table;

14 assigning document object attributes to the first link reference associated
15 with the first document object;

16 storing the second link reference to the second document object in a
17 document object table; and

18 assigning document object attributes to the second link reference
19 associated with the second document object.

20 47. The computer readable medium of claim 46, wherein one or more of the link
21 relationship attributes are set; and a directional indicator for the link relationship attribute
22 is set by associating one document object attribute for the first link reference with one
23 document object attribute for the second link reference.

24 48. The computer readable medium of claim 43 further comprising:

25 selecting a link reference to a first document object related to a second
26 document object that a second user is currently accessing, by identifying those
27 link relationships, stored in the one or more link directories, that include a link
28 reference to a network address of the second document object the second user is
29 currently accessing; and

30 displaying the selected link reference to the second user.

31 49. The computer readable medium of claim 48, wherein the displaying step
32 comprises displaying more than one link reference from one or more link directories.

1 50. The method of claim 48, wherein the displaying step comprises sorting and
2 presenting one or more link references by the one or more link directories storing the link
3 references.

4 51. The method of claim 50, wherein the displaying step comprises sorting and
5 presenting the one or more link references by attributes of the link relationships and link
6 references.

7 52. The computer readable medium of claim 40, wherein the one or more link
8 directories are accessible only by a specific individual user of a client device.

9 53. The computer readable medium of claim 40 wherein the one or more link
10 directories may be stored on a server connected to the network by means of a secure
11 connection.

12 54. The computer readable medium of claim 40 further comprising assigning
13 attributes to the link relationship established between the first document object and the
14 second document object.

15 55. The computer readable medium of claim 54 further comprising assigning
16 attributes to a first link reference to the first document object and a second link reference
17 to the second document object.

18 56. The computer readable medium of claim 54 wherein the link relationship stored in
19 the one or more link directories may be organized, sorted, searched and filtered by one or
20 more attributes assigned to the link relationships.

21 57. The computer readable medium of claim 55 wherein the link references stored in
22 the one or more link directories may be organized, sorted, searched and filtered by one or
23 more attributes assigned to the link references.